

**Key data**

Molded part	Bumper strip
Application	Car bumper
Part weight	150 g
Material	ASA
Mold type	Single-cavity mold
No. of cavities	1

**Customer's requirements**

This application involved the production of decorative strips for the front bumper of a car. The mold was to be filled in a cascade, avoiding flow lines and marks on the moldings.

**Solution**

In the implementation of this application, an externally heated 5-port hot runner system with valve gate nozzles screwed into the runner and melt pressure control was employed. Manifold form and nozzle lengths were specially adapted to the part contour and the required injection points. The cavity was gated via cold sub-runners that were fed by valve gate nozzles. A pressure-controlled melt valve was installed upline of each nozzle with which the flow cross-section in the runner could be varied dynamically and infinitely online and in real time or could be held constant. This permitted not only gentle opening and closing but also the generation of individual pressure profiles during the filling and holding pressure phases for each individual nozzle.

**Benefits**

- Pressure-controlled cascade filling from the middle of the molding
- Gentle and infinitely variable opening of individual nozzles
- Roughly identical melt front velocity over the whole molding length
- High surface quality, no flow lines
- High dimensional accuracy and form stability

**Schematic product overview**

1. Manifold nozzle, screw fit  
**Series 16 E01, Type LV**
2. Manifold  
**Series VF**
3. Melt valve block DFTB with pressure transducer
4. Actuator, hydraulic, bolted  
**Series HYC 4520M 01**
5. Servo valves (and pressure generator)
6. PID controller **DFC**
7. Start signal from the injection molding machine



Illustrations simplified, schematically drawn and not to scale.  
For a specific application, please consult Synventive.



Picture: Ford

